

# NMME Subseasonal Demonstration Experiment

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## ***NMME Subseasonal Team***

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# Limited scope re-forecast experiment

## Demonstrate Potential for MJO Prediction with NMME

1. 1999-2012
1. Initialization Dates: November only on the 2nd, 7th, 12th, 17th, 22th, 27<sup>th</sup>, following the CFSv2rr dates
2. 45-days
3. Ocean and atmosphere initialized; land initialization is strongly encouraged, but not required
4. The method of initialization is left up to the modeling group
1. Number & method of perturbations/ensemble members is left up to the modeling group (at least 3 recommended).
1. Daily means: SST, U200, U850, OLR, Precip, MSLP, Z200

## **Models**

NCEP-CFSv2

NASA-GMAO

RSMAS/NCAR-CCSM4

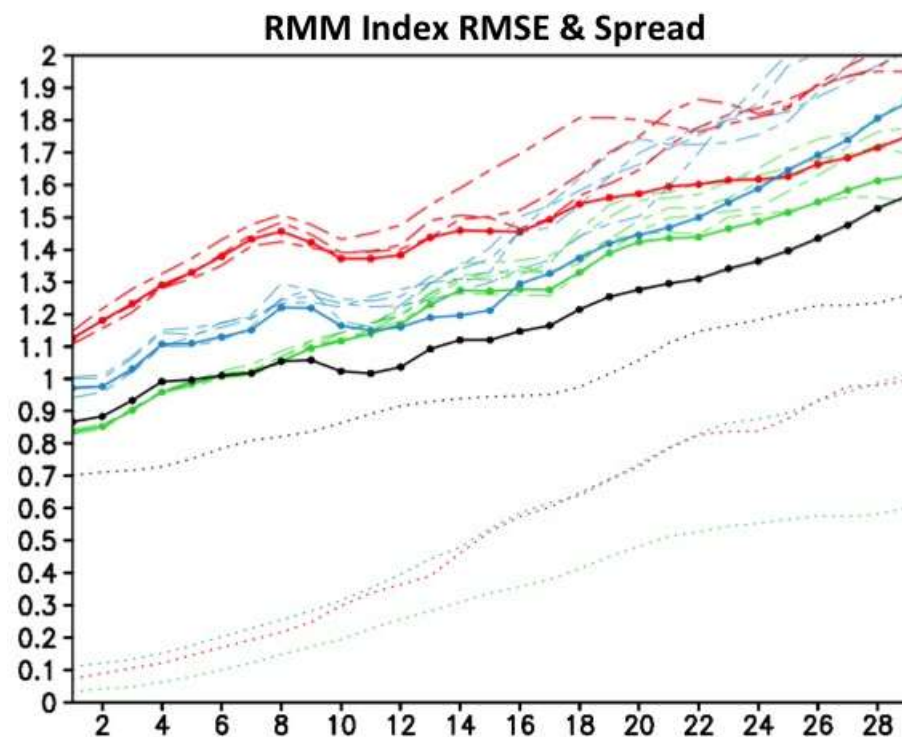
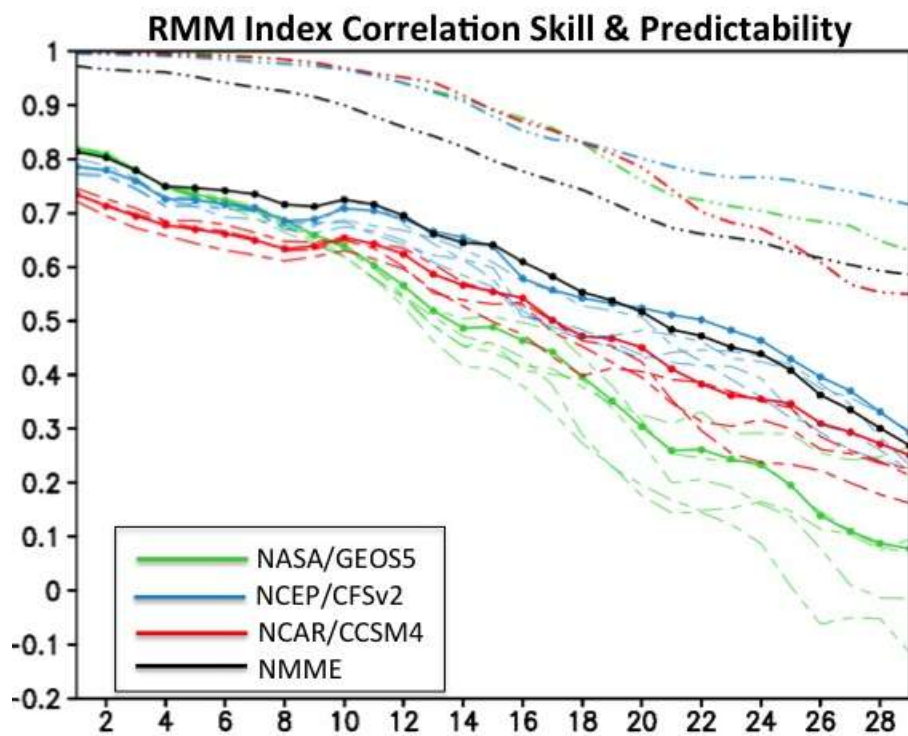
## **Data**

COLA made available via ftp to NMME subseasonal team

## **Metrics**

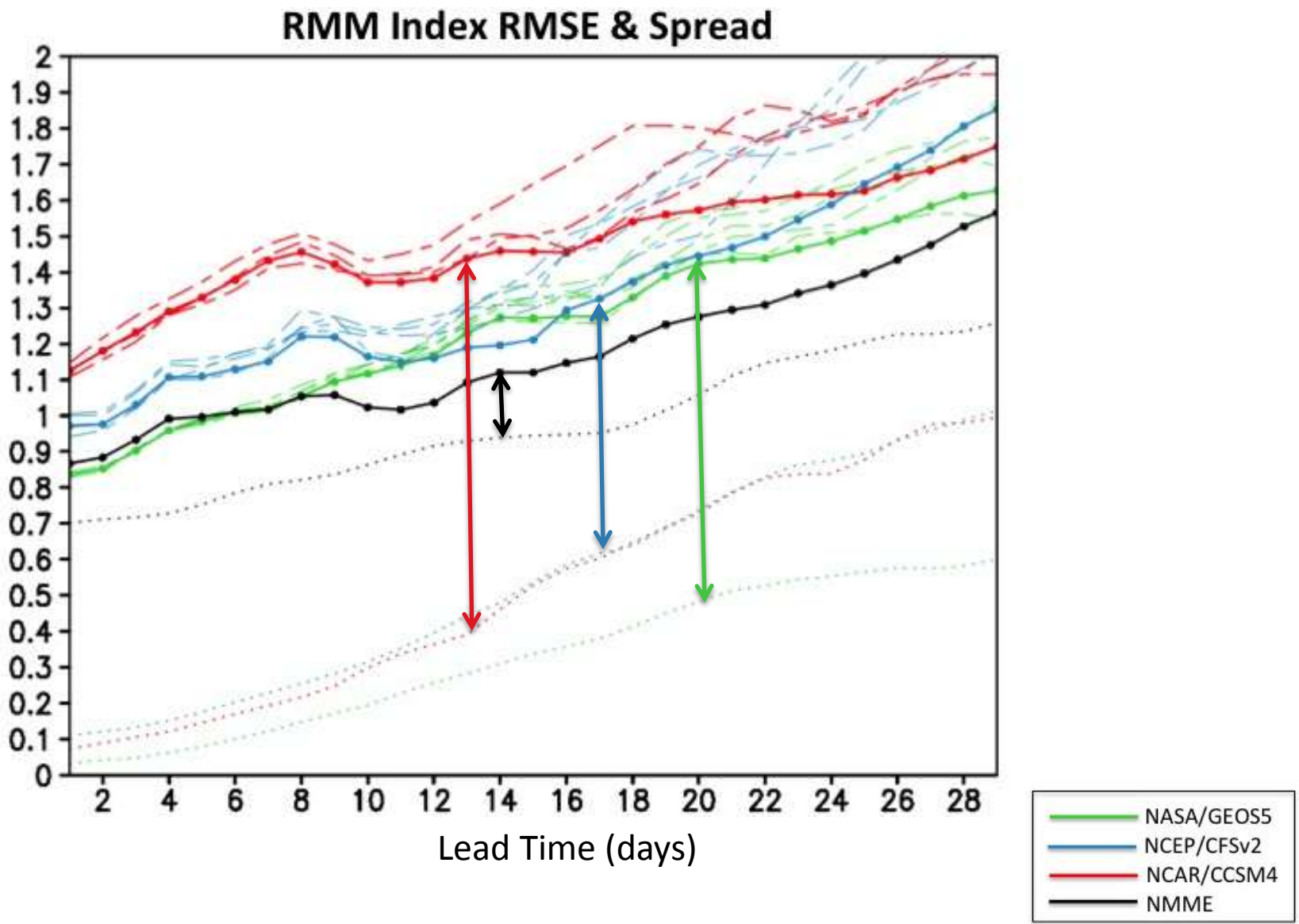
RMM index skill & predictability

## A subseasonal NMME can take advantage of differing model skill at different lead-times



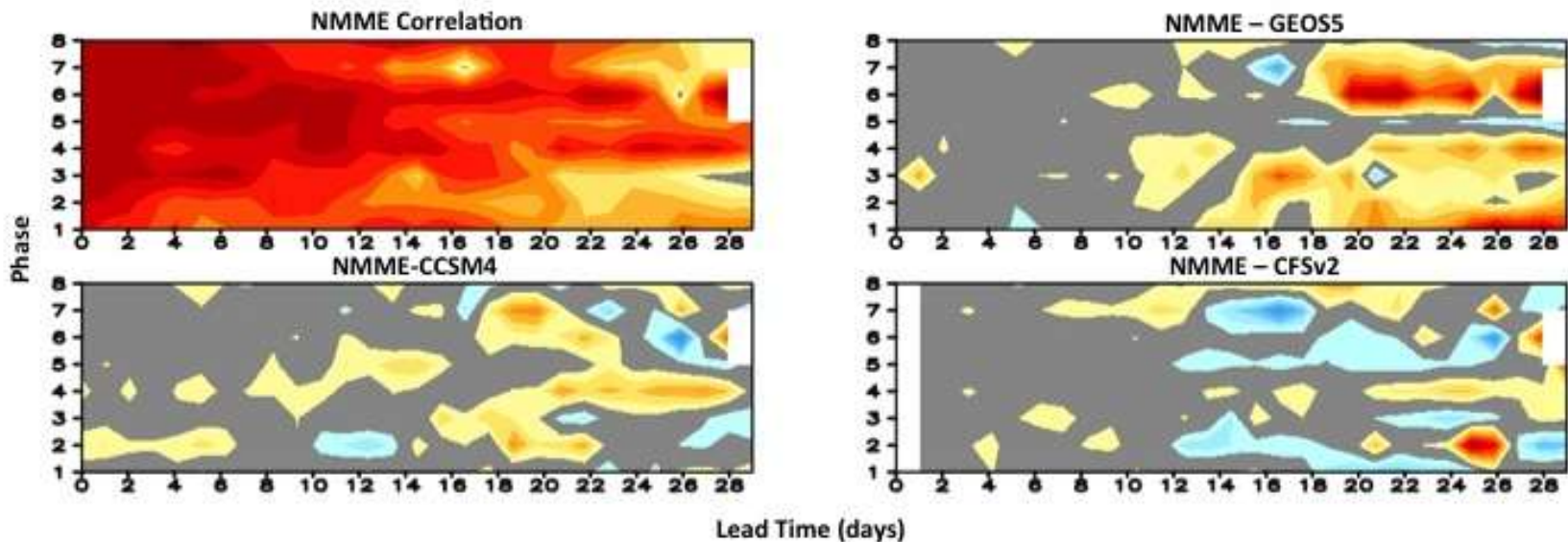
Lead Time (days)

## A subseasonal NMME better represents the relationship between ensemble spread & error



# A Subseasonal NMME can take advantage of differing model skill for different phases of the MJO

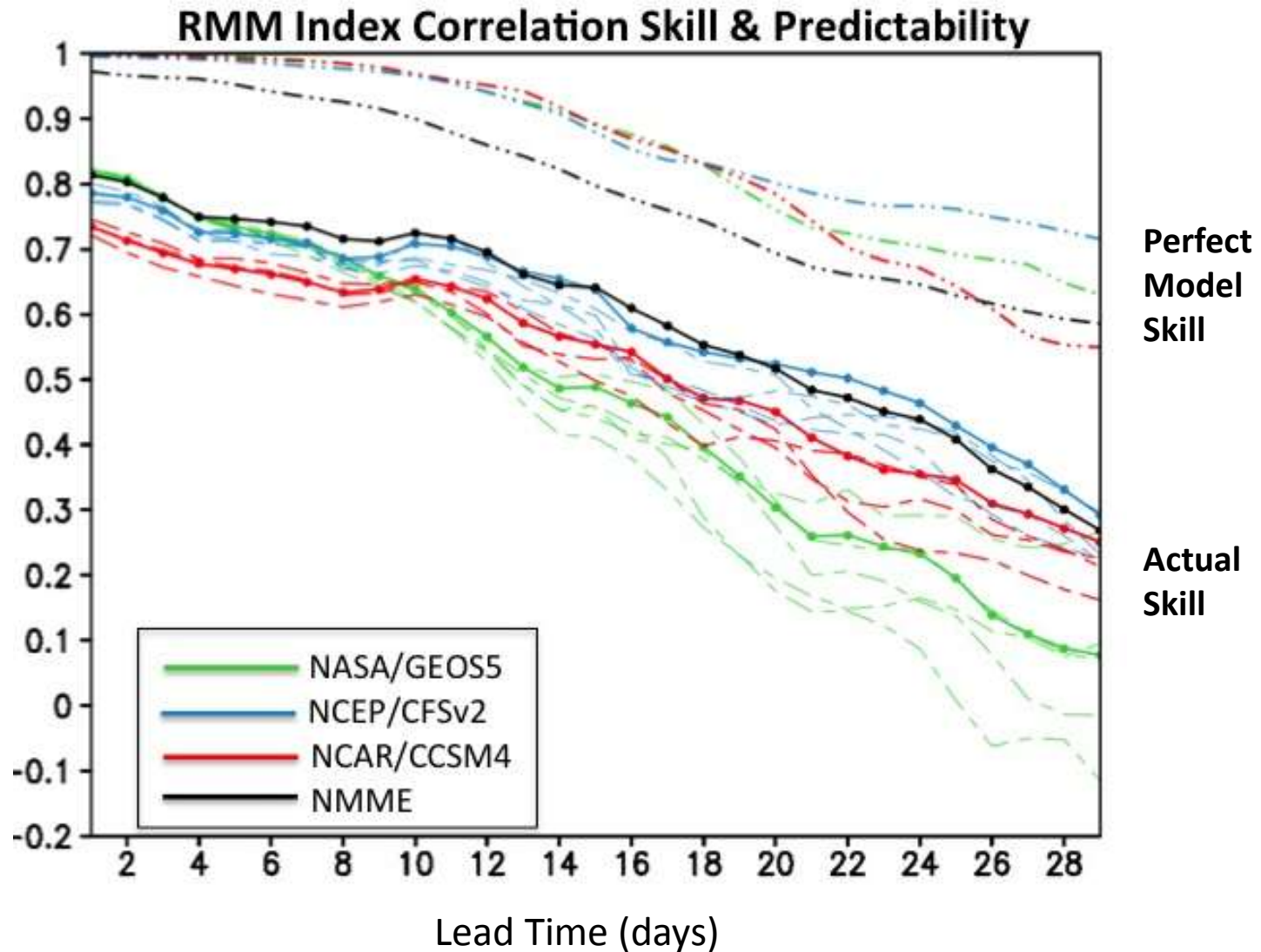
RMM Bivariate Correlation by Phase



Model better than NMME

NMME better than model

## A subseasonal NMME can provide understanding of predictability limits



# Summary

1. There is a evidence for a potential benefit for subseasonal NMME
  2. This a very limited experiment, so the benefit cannot be rigorously assessed.
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1. We have barely scratched the surface by looking at one source of predictability.
  2. Need to assess benefit for other sources of predictability/phenomena, operational forecasting, and applications.

*This will require a more substantial re-forecast experiment designed to look like an operational forecast system*